

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A microelectrode comprising:

an electrically conducting diamond layer;

a non-conducting diamond layer formed from electrically non-conducting diamond
presenting a planar surface

one or more pins or projections of electrically conducting diamond extending at least partially through the non-conducting diamond layer, the pins presenting planar areas of electrically conducting diamond;

the pins or projections which extend to the planar surface of the non-conducting diamond layer, presenting planar areas of electrically conducting diamond co-planar with the planar surface of the electrically non-conducting diamond; and

a contact surface or surfaces on a back side of the electrically conducting diamond layer for connection to an external circuit.

Claim 2 (Previously Presented): A microelectrode according to claim 1, wherein the pins or projections extend to a surface of the non-conducting diamond layer, presenting areas of electrically conducting diamond co-planar with that surface.

Claim 3 (Previously Presented): A microelectrode according to claim 1, wherein areas of the electrically conducting diamond layer are recessed relative with a surface of the non-conducting diamond layer, creating a well or reservoir in that surface.

Claim 4 (Previously Presented): A microelectrode according to any one of claims 1 to 3, wherein the pins or projections of electrically conducting diamond comprise circular areas of the electrically conducting diamond.

Claim 5 (Original): A microelectrode according to claim 3, wherein the well or reservoir contains an additive which presents a surface co-planar with the surface in which the well or reservoir is created.

Claim 6 (Original): A microelectrode according to claim 5, wherein the additive modifies the sensitivity or selectivity of the electrode behaviour.

Claim 7 (Original): A microelectrode according to claim 5 or claim 6, wherein the additive is an electrochemical (bio-)chemical.

Claim 8 (Previously Presented): A microelectrode according to claim 1, wherein areas of the electrically conducting diamond layer are in electrical connection a surface of the electrically conducting diamond layer.

Claim 9 (Previously Presented): A microelectrode according to claim 1, wherein areas of the electrically conducting diamond layer are internally electrically connected within the diamond layer into one or more groups of electrodes.

Claim 10 (Previously Presented): A microelectrode according to claim 1, wherein areas of the electrically conducting diamond layer are externally electrically connected into one or more groups of electrodes.

Claim 11 (Original): A microelectrode according to claim 1, wherein the diamond is synthetic single crystal or polycrystalline diamond.

Claim 12 (Original): A microelectrode according to claim 1, wherein the diamond is CVD synthetic single crystal or polycrystalline diamond.

Claim 13 (Previously Presented): A microelectrode according to claim 2, wherein areas of the electrically conducting diamond layer are co-planar surface and smooth.

Claim 14 (Previously Presented): A microelectrode according to claim 2, wherein areas of the electrically conducting diamond layer are co-planar surface and have a surface roughness of less than 100 nmRa.

Claim 15 (Original): A microelectrode according to claim 1, wherein the electrically conducting diamond is boron doped diamond.

Claim 16 (New): A microelectrode comprising:
an electrically conducting diamond layer;
a non-conducting diamond layer formed from electrically non-conducting diamond presenting a planar surface;

one or more pins of electrically conducting diamond extending at least partially through the non-conducting diamond layer presenting areas of electrically conducting diamond which are recessed relative to the planar surface of non-conducting diamond layer, creating a well or reservoir in that surface;

the well or reservoir containing an additive which presents a surface co-planar with the planar surface in which the well or reservoir is created; and

a contact surface or surfaces on a back side of the electrically conducting diamond layer for connection to an external surface.

Claim 17 (New): A microelectrode according to claim 1, wherein the electrically conducting diamond comprises diamond doped with boron.

Claim 18 (New): A microelectrode according to claim 16, wherein the electrically conducting diamond comprises diamond doped with boron.